

CLAIMS

1. A method of making a chewing gum composition comprising the steps of:
 - a) making a syrup by evaporating water from a mixture comprising:
 - i) an aqueous sorbitol solution containing at least 50% sorbitol;
 - ii) a plasticizing agent selected from the group consisting of glycerin, propylene glycol and mixtures thereof; and
 - iii) a hydrogenated starch hydrolyzate syrup,
 - iv) wherein the final evaporated syrup composition comprises less than 10% moisture, about 5% to about 20% plasticizing agent, at least 50% sorbitol, about 3% to about 25% maltitol, and at least 1.5% hydrogenated oligosaccharides having a DP of 3 or greater; and
 - b) mixing the syrup with gum base and additional chewing gum ingredients to produce the chewing gum composition.
2. The method of claim 1 wherein the step of mixing the syrup with the gum base comprises:
 - a) providing about 5% to about 95% gum base;
 - b) providing about 5% to about 95% of a bulking agent, the bulking agent comprising the syrup;
 - c) providing about 0.1 to about 15% flavoring agent; and
 - d) mixing the gum base, bulking agent and flavoring agent to form the chewing gum composition.
3. The method of claim 1 wherein the syrup comprises over 30% of the chewing gum composition.
4. The method of claim 1 wherein the additional chewing gum ingredients comprise a flavoring agent and a powdered bulking agent.

5. The method of claim 1 wherein the chewing gum composition is sugarless.

6. The method of claim 1 wherein the mixture, prior to evaporation, comprises about 52% to about 87% sorbitol solution, about 8% to about 20% plasticizing agent and about 5% to about 30% hydrogenated starch hydrolyzate syrup.

7. The method of claim 1 wherein the syrup, after evaporation, has a water content of less than about 4%.

8. A chewing gum composition comprising a homogeneous mixture of gum base and a bulking agent wherein the bulking agent comprises an aqueous sugarless syrup comprising at least 50% sorbitol, about 3% to about 25% maltitol, about 8% to about 20% plasticizing agent and at least 1.5% hydrogenated oligosaccharides having a DP of 3 or greater and wherein the chewing gum composition has less than 2% moisture and said syrup comprises over 30% of said composition.

9. The chewing gum composition of claim 8 wherein said syrup comprises over 40% of the composition.

10. The chewing gum composition of claim 8 wherein sorbitol comprises over 60% of said syrup.

11. An aqueous syrup for use in making both stick and pellet chewing gum products comprising, on a dry basis:

- a) about 60% to about 80% sorbitol,
- b) about 8% to about 15% plasticizing agent selected from the group consisting of glycerin, propylene glycol and mixtures thereof, and
- c) about 5% to about 30% hydrogenated starch hydrolyzate, the hydrogenated starch hydrolyzate containing hydrogenated oligosaccharides having

a DP of at least 3 or greater of at least 1.5% of the dry basis of the syrup, and at least 4% maltitol on the dry basis of the syrup.

12. The aqueous syrup of claim 11 wherein the oligosaccharides having a DP of at least 3 or greater have a weight average DP of between about 4 and about 5.

13. The aqueous syrup of claim 11 wherein the syrup comprises about 3% moisture.

14. A method of making a syrup for use in both stick and pellet chewing gum products comprising the steps of:

- a) providing sorbitol in an aqueous solution having a solids content of at least about 50% sorbitol and about 30% to about 50% water;
- b) mixing said sorbitol solution with
 - i) a plasticizing agent selected from the group consisting of glycerin, propylene glycol and mixtures thereof, and
 - ii) a hydrogenated starch hydrolyzate syrup containing, by weight of the hydrogenated starch hydrolyzate syrup, at least 50% maltitol and at least 10% hydrogenated oligosaccharides having a DP of 3 or greater; and
- c) removing moisture from said mixture to produce a syrup having a moisture content of less than about 10%.

15. The method of claim 14 wherein the mixture comprises, on a dry basis, about 8% to about 25% plasticizing agent.

16. The method of claim 14 wherein the mixture comprises, on a dry basis, about 4% to about 25% maltitol.

17. The method of claim 14 wherein the hydrogenated oligosaccharides having a DP of at least 3 or greater in the mixture have a weight average DP of between about 4 and about 5.

18. The method of claim 14 wherein the evaporation is carried out under vacuum.

19. The method of claim 14 wherein the sorbitol solution comprises about 70% sorbitol and about 30% water.

20. The method of claim 14 wherein the syrup is evaporated to a moisture content of less than about 5%.

21. The method of claim 14 wherein the syrup is evaporated to a moisture content of less than about 3%.

22. A method of making at least two different chewing gum compositions, at least one of the compositions being used to make stick chewing gum products and at least one of the compositions being used to make coated chewing gum products, comprising the steps of:

- a) evaporating a mixture comprising sorbitol solution, glycerin and hydrogenated starch hydrolyzate syrup to form an evaporated sugarless syrup; and

- b) mixing the evaporated sugarless syrup with a first set of additional chewing gum ingredients comprising gum base, a sugarless bulk sweetener and a flavoring agent, to form a first chewing gum composition;

- c) forming the first chewing gum composition into stick chewing gum products;

- d) mixing the evaporated sugarless syrup with a second set of additional chewing gum ingredients different than the first set of additional chewing gum ingredients, the second set of additional chewing gum ingredients comprising gum base, a sugarless bulk sweetener and a flavoring agent, to form a second chewing gum composition;

- e) forming the second chewing gum composition into cores; and

- f) coating the cores with a sugarless coating.

23. The method of claim 22 wherein the mixture of step a), after evaporation, has a solids content of about 50% to about 80% sorbitol, about 4% to about 25% maltitol, and about 1.5% to about 5% hydrogenated oligosaccharides having a DP greater than 3 and with a weight average DP of between about 4 and about 5.

24. The method of claim 22 wherein the sorbitol solution comprises about 70% sorbitol and about 30% water, and the mixture of step a), prior to evaporation, comprises about 52% to about 87% of said sorbitol solution, about 8% to about 20% glycerin and about 5% to about 30% hydrogenated starch hydrolyzate.

25. A chewing gum formulation comprising:

- a) a water insoluble gum base; and
- b) a water soluble portion which includes sorbitol, the sorbitol being present, at least initially, in the formulation as a syrup of aqueous sorbitol and comprising approximately 25% to about 65% by weight of the formulation, the syrup being created by coevaporating a solution that comprises, prior to coevaporation, approximately 52% to about 87% by weight aqueous sorbitol, approximately 5% to about 30% by weight of a hydrogenated starch hydrolyzate syrup and approximately 8% to about 20% by weight of a plasticizing agent selected from the group consisting of glycerin, propylene glycol and mixtures thereof.

26. The chewing gum of claim 25 wherein the syrup is created by coevaporating a solution that comprises, prior to coevaporation:

- a) approximately 55% to about 75% by weight aqueous sorbitol;
- b) approximately 5% to about 20% by weight hydrogenated starch hydrolyzate syrup; and
- c) approximately 8% to about 15% by weight glycerin.

27. The chewing gum of claim 25 wherein the syrup includes not more than 10% water.

28. The chewing gum of claim 25 wherein the chewing gum formulation includes a crystalline form of sorbitol.

29. The chewing gum of claim 25 wherein the chewing gum formulation is sugarfree.

30. The chewing gum formulation of claim 25 wherein the water insoluble gum base is wax-free.

31. The chewing gum formulation of claim 25 wherein the chewing gum formulation includes artificial sweeteners.

32. The chewing gum formulation of claim 25 wherein the chewing gum formulation includes glycerin beside the plasticizing agent in the syrup.

33. A method for creating chewing gum compositions for use in making stick chewing gum products and chewing gum compositions used to make coated pellet chewing gum products comprising the steps of:

a) coevaporating a solution that comprises, prior to coevaporation, approximately 52% to about 87% by weight aqueous sorbitol, approximately 5% to about 30% by weight of hydrogenated starch hydrolyzate syrup, and approximately 8% to about 20% by weight of a plasticizing agent selected from the group consisting of glycerin, propylene glycol and mixtures thereof;

b) using the syrup to make a first chewing gum composition for stick chewing gum products, wherein the syrup comprises about 40% to about 65% of the first chewing gum composition; and

c) using the syrup to make a second chewing gum composition for coated pellet chewing gum products, wherein the syrup comprises about 30% to about 55% of the second chewing gum composition.

34. The method of claim 33 wherein the syrup is created by coevaporating a solution that comprises, prior to coevaporation:
- a) approximately 55% to about 75% by weight aqueous sorbitol;
 - b) approximately 5% to about 20% by weight hydrogenated starch hydrolyzate syrup; and
 - c) approximately 8% to about 15% by weight glycerin.
35. The method of claim 33 wherein the syrup includes not more than 10% water.
36. A method for producing chewing gum that includes sorbitol comprising the steps of:
- a) providing a syrup consisting essentially of:
 - i) aqueous sorbitol,
 - ii) a plasticizing agent selected from the group consisting of glycerin, propylene glycol and mixtures thereof, and
 - iii) hydrogenated starch hydrolyzate syrup,
 - b) evaporating water from the syrup; and
 - c) combining the evaporated syrup to additional chewing gum ingredients to create a chewing gum formulation.
37. The method of claim 36 wherein the syrup is created by coevaporating a solution that comprises, on a dry basis:
- a) approximately 55% to about 87% by weight sorbitol;
 - b) approximately 4% to about 25% by weight maltitol;
 - c) approximately 1.5% to about 5% hydrogenated oligosaccharides having a DP of 3 or greater; and
 - d) approximately 5% to about 20% by weight glycerin.
38. The method of claim 36 wherein the syrup includes not more than 10% water.

39. The method of claim 36 wherein the additional chewing gum ingredients includes a crystalline form of sorbitol.
40. The method of claim 36 wherein the chewing gum formulation is sugarfree.
41. The method of claim 36 wherein the syrup comprises approximately 25% to about 65% by weight of the chewing gum formulation.
42. A sorbitol-containing product comprising a syrup consisting essentially of:
- a) aqueous sorbitol,
 - b) a plasticizing agent selected from the group consisting of glycerin, propylene glycol and mixtures thereof; and
 - c) hydrogenated starch hydrolyzate syrup.
43. The product of claim 42 wherein the syrup is created by the coevaporation of a solution that comprises, prior to coevaporation:
- a) approximately 52% to about 87% by weight aqueous sorbitol;
 - b) approximately 4% to about 25% by weight maltitol;
 - c) approximately 1.5% to about 5% hydrogenated oligosaccharides having a DP of 3 or greater; and
 - d) approximately 5% to about 20% by weight glycerin.
44. The product of claim 42 wherein the syrup includes not more than 10% water.
45. The product of claim 42 wherein the syrup comprises not more than 3% water.